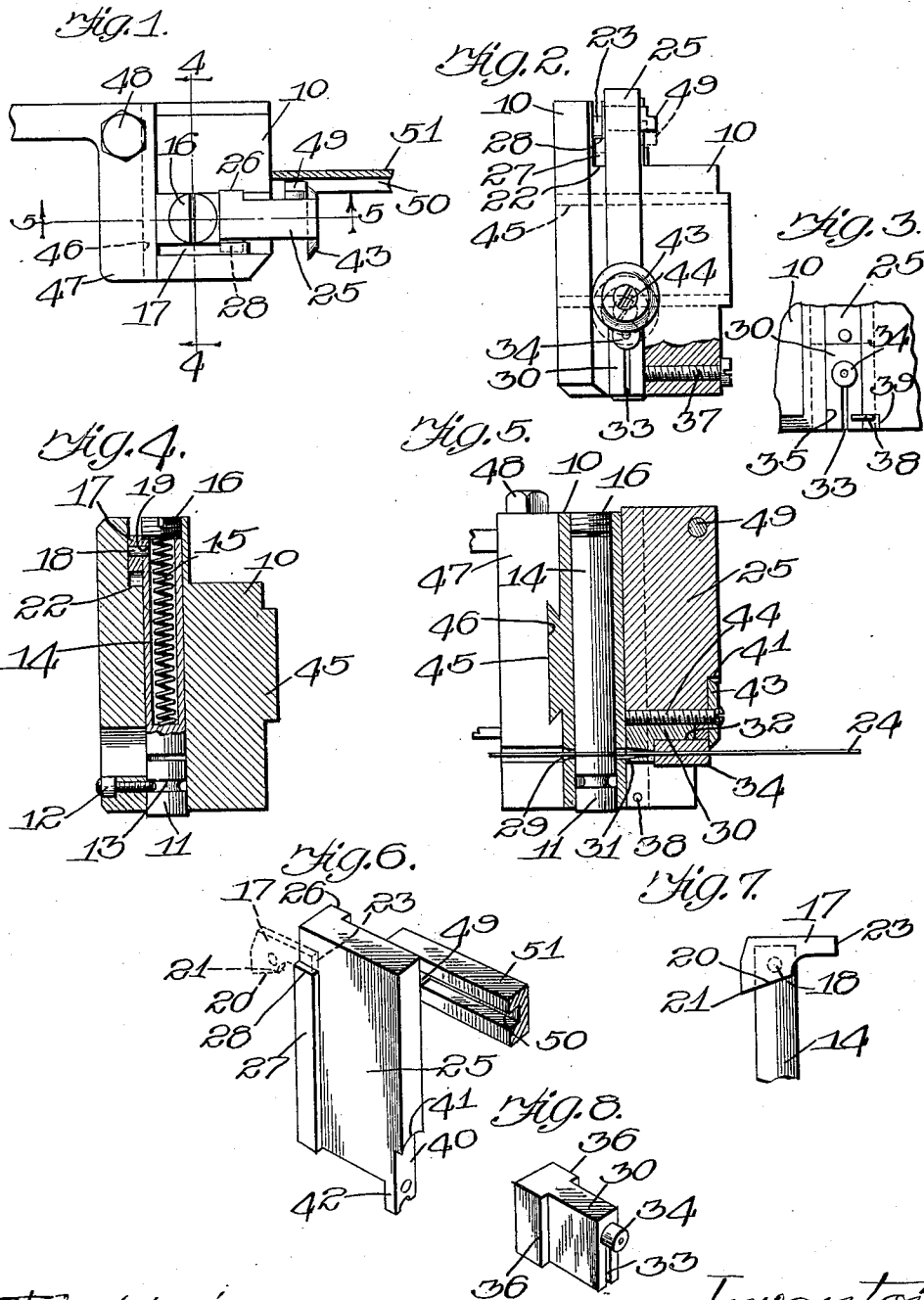


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CUTTING MECHANISM FOR WIRE STITCHING MACHINES.
APPLICATION FILED JUNE 12, 1909.

980,874.

Patented Jan. 3, 1911.



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CUTTING MECHANISM FOR WIRE-STITCHING MACHINES.

980,874.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Original application filed June 5, 1907, Serial No. 377,454. Divided and this application filed June 12, 1909. Serial No. 501,694.

To all whom it may concern:

Be it known that we, HARRY H. LATHAM and WILLIAM OSTERHOLM, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cutting Mechanism for Wire-Stitching Machines, of which the following is a specification.

This invention relates to improvements in cutting mechanism for wire stitching machines, particularly adapted for use in the type of machines shown and described in our application for United States Letters Patent, Serial No. 377,454, filed June 5, 1907, the present application being a division thereof, and the primary object of the invention is to provide an improved detachable cutter supporting block and cutter, and improved means for operating the cutter.

A further object is to provide an improved cutter supporting block including an improved wire guide support cooperating with the cutter, and improved means for reversibly and removably securing the guide to the support.

A further object is to provide improved means for removably securing the wire guide support to the cutter block.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed, and shown in the accompanying drawings, illustrating an exemplification of the invention, and in which—

Figure 1 is a detail top plan view of an improved device of this character constructed in accordance with the principles of this invention, showing a portion of the cutter operating means in section. Fig. 2 is a detail right hand elevation of Fig. 1, partly in section. Fig. 3 is an enlarged detail front elevation of a portion of the cutter block with the cutter removed. Fig. 4 is a detail sectional view on line 4—4 of Fig. 1. Fig. 5 is a detail sectional view on line 5—5 of Fig. 1. Fig. 6 is a detail perspective view of the movable support for the cutter, and

the operating dog for the movable wire gripper or plunger, and which is supported by the gripper and also showing the operating means for the movable member. Fig. 7 is a detail elevation showing the operating dog for the gripper or plunger of the wire retaining mechanism. Fig. 8 is a detail perspective view of the wire guide tube support with the tube in position.

Referring more particularly to the drawings, and in the present exemplification of the invention, the numeral 10 designates the cutter block, removably situated in which is a member 11 which is held in position in any desired or suitable manner, preferably by means of a screw or bolt 12 passing through the cutter block 10 and with the extremity thereof seated in a circumferential grooved portion 13 on the member 11. A gripping member or plunger 14 is also situated within the cutter block 10, and so disposed that one extremity thereof will cooperate with one extremity or face of the member 11, and the adjacent faces of these members 11 and 14 may be corrugated or roughened in any suitable manner, if desired, to prevent the wire from slipping when gripped by these members in the manner to be set forth. Any suitable means may be provided for holding the adjacent extremity or face of the gripper member or plunger 14 normally in engagement with the face of the member 11. A suitable and efficient means for accomplishing this purpose comprises a yielding member 15, preferably in the form of a coil spring which is situated within the gripper member or plunger 14, so that one extremity thereof will engage a suitable shoulder on said member and the other extremity will engage a screw or cap 16 removably secured to the cutter block 10 and by means of which screw or cap the tension of the elastic member or spring 15 may be regulated.

Any suitable means may be provided for raising or lowering the gripper member or plunger 14 with relation to the member 11, and a suitable and efficient means for accomplishing this purpose comprises a dog or pawl 17 which is provided with a laterally projecting lug or extension 18 adapted to be situated in a suitable aperture 19 in the

gripper member or plunger 14 (see Fig. 4), preferably adjacent the upper extremity thereof, and said dog or pawl is provided with an inclined face 20 to form an extension 21 which is adapted to be brought into engagement with a suitable shoulder 22 on the cutter block 10 (see Fig. 4) to raise the gripper member or plunger 14 when the free extremity 23 of the dog or pawl is raised, the yielding member or spring 15 tending to return the plunger to its normal position to grip the wire 24, as shown more clearly in Fig. 5 of the drawings.

Slidably mounted in the cutter block 10 is a member 25 which is provided with laterally projecting flanges 26, 27 adapted to move in suitable guides or ways in the cutter block, and said member 25 is of such a length that one end thereof projects beyond the front end of the cutter block 10, as shown more clearly in Figs. 1, 2 and 5 of the drawings. The laterally projecting portion 27 preferably terminates short of the top of the member 25 to form a shoulder 28, as shown more clearly in Fig. 6, and said shoulder 28 is so arranged that when the member 25 is elevated or raised in a manner to be set forth more fully hereinafter, the shoulder 28 will engage the extremity 23 of the dog or pawl 17 to rock the dog or pawl about its point of pivotal support 18 to raise the gripper member or plunger 14 to release the wire 24 to permit the same to be advanced to the staple forming mechanism.

The cutter block 10 is provided with a suitable aperture 29 preferably in direct line with the point of engagement of the faces of the members 11, 14, and through which aperture the wire 24 is adapted to pass. A block or member 30 is provided with an aperture 31 preferably conical in shape, and a recessed portion 32 which communicates with the aperture 31, and said member is also provided with a bifurcation 33 which preferably communicates with the recess 32. A tubular member 34 is adapted to be seated in the recess 32 of the member 30, and said tubular member is preferably of such a length as to extend for some distance beyond the front edge of the member 30, and is of such a diameter that when the end thereof is inserted in the recess 32, it will be frictionally held in position. The tubular member 34 is so arranged that the aperture therein will register with the aperture 31 in the block or member 30, and said block or member is adapted to be inserted into a suitable recessed portion 35 in the cutter block 10, and said recessed portion 35 is so arranged that when the block or member 30 is in position, the aperture 31 therein will register with the aperture 29 in the cutter block 10. The member 30 is preferably provided with laterally projecting portions 36 adapted to enter the lower extremities of

the guides or ways in which the extensions 26, 27 on the member 25 move, and said member 30 is secured against displacement in any desired or suitable manner, preferably by means of a screw or bolt 37 passing into the block 10, so that its extremity will engage the side of the member 30 and also serve to compress the member adjacent the bifurcated portion 33 to clamp the tubular member 34 in position. Any suitable means may be provided for insuring the proper insertion and adjustment of the member 30 to direct it into its proper position. A suitable and efficient means for accomplishing this purpose comprises a laterally projecting lug 38 on the member 30 which is adapted to enter a suitable recessed portion 39 in the cutter block 10. When the member 30 with the tubular member 34 secured thereto are in proper position, the wire 24 will pass in a straight line through all the registering apertures.

The member 25 is provided in its front edge adjacent the lower extremity thereof with a recessed portion 40 to form a shoulder 41 and a portion 42 which preferably depends below the lower edge of the member, and secured to the front edge of the member 25 adjacent the lower extremity thereof is a cutter 43 preferably in the form of a circular disk having a beveled periphery to form a circumferential cutting edge, and said cutter is held in position or secured to the member 25 and against rotation in any desired or suitable manner, preferably by means of a screw or bolt 44 passing transversely therethrough, and into the depending portion 42 of the member 25. This cutter is so arranged that a portion of the periphery thereof will stand below and in close proximity to the shoulder 41 of the member 25 to be protected thereby, and so that another portion of its periphery will engage and cut the wire 24 adjacent the extremity of the tubular member 34, and said member 34 is of such a length that its extremity will stand in close proximity to the rear face of the cutter 43 when the latter is lowered or depressed. When the cutter 43 is secured in position, the body of the screw 44 beyond the depending portion 42 will stand adjacent the lower edge of the member 25 and above the member 30.

The cutter block 10 is provided with a dovetail projection 45 extending transversely across one face thereof, and said projection 45 is adapted to be supported in a dovetail groove 46 in a reciprocating head 47 to support the cutter block in position, and said cutter block is held against accidental displacement in any suitable manner, preferably by means of a suitable fastening screw or bolt 48 which is situated in the head 47. The groove 46 opens through the sides of the head 47 so that when the screw

or bolt 48 is loosened, the cutter block with the supported mechanism may be readily removed or detached from the head.

The member 25 is provided with a laterally projecting lug 49 preferably adjacent the front edge thereof, and near the top, and said projection 49 is adapted to enter a suitable groove 50 in a member 51 which latter is secured to any suitable vertical reciprocating portion of the staple forming mechanism whereby the operation of the staple forming mechanism will simultaneously reciprocate the member 25.

With this improved construction of cutter, it will be seen that the member 30 may be removed from the cutter block 10 when the latter is removed from the machine by loosening the screw 37, and when removed, the tubular cutter 34 may be adjusted by axially rotating the same to present a new surface or anvil on which the wire rests, and which coöperates with the cutter 43, or it may be bodily removed from the member 30 and turned end for end. After having been adjusted, the member 30 may be again inserted or placed in position and secured against removal by tightening the screw 37. It will also be noted that when a portion of the periphery of the cutter 43 becomes dull or worn, the screw or bolt 44 may be loosened and the cutter 43 moved about the screw or bolt as an axle to place a new portion of the periphery into active position, after which the screw or bolt may be again tightened to clamp the cutter against rotation.

In order that the invention might be fully understood, the details of the foregoing embodiment thereof have been thus specifically described, but what we claim as new is:

1. A cutter block provided with a wire passage, a tubular member, a support for said member, means for detachably securing the support to the block, said tubular member being adapted to register with the wire passage, a cutter supporting member, a cutter supported thereby and adapted to coöperate with one end of the tubular member to cut the wire, and means for reciprocating the cutter.

2. A cutter block provided with a wire passage, a tubular member, a support for said member, means for detachably securing the support to the block, a stop for the support for positioning the tubular member to register with the wire passage, a cutter supporting member, a cutter supported thereby and adapted to coöperate with the end of the tubular member to cut the wire, and means for reciprocating the cutter.

3. A detachable cutter block provided with a wire passage, an adjustable tubular member supported by the block and reversible end for end, means for securing the member in position to register with the wire passage, a reciprocating member adapted to

coöperate with the end of the tubular member to cut the wire, and means for reciprocating the cutter.

4. A detachable cutter block provided with a wire passage, a reciprocating cutter supporting member movable on the block, a cutter secured to the support and adapted to coöperate with one end of the wire passage to cut the wire, and means for adjusting the cutter to present a new cutting edge to the wire.

5. A cutter block provided with a wire passage, a reciprocating cutter supporting member movable on the block, a cutter secured to the support and adapted to coöperate with one end of the wire passage to cut the wire, said cutter comprising a disk having a peripheral cutting edge, and a bolt passing through the cutter and into the support for clamping the cutter to the support, said cutter being adapted to be adjusted to present a new cutting surface to the wire.

6. In combination, a cutter block provided with a wire passage, a bifurcated member, a tubular member, one extremity of said tubular member being inserted into the bifurcation for removably supporting the tubular member, a common means for securing the bifurcated member to the cutter block and for securing the tubular member against displacement, a reciprocating cutter adapted to coöperate with the end of the tubular member to sever the wire, and means for reciprocating the cutter.

7. In combination, a cutter block provided with a wire passage, a bifurcated member, a tubular member, one extremity of said tubular member being inserted into the bifurcation for removably supporting the tubular member, said cutter block being provided with a recess adapted to receive the said bifurcated member, a common means for securing the bifurcated member against displacement and for clamping the bifurcated member to hold the tubular member against displacement, a reciprocating cutter coöperating with the end of the tubular member to sever the wire, and means for reciprocating the cutter.

8. In combination, a cutter block provided with a wire passage, a bifurcated member, a tubular member, one extremity of said tubular member being inserted into the bifurcation for removably supporting the tubular member, said cutter block being provided with a recess adapted to receive the bifurcated member, interengaging means on the block and the bifurcated member for directing the latter in position, means for securing the bifurcated member in position, a reciprocating cutter coöperating with the tubular member to sever the wire, and means for reciprocating the cutter.

9. In combination, a cutter block provided with a wire passage, a support, a tubular

member removably and reversibly supported thereby, said block being provided with a recess to receive the support, one of the elements being provided with a slot and the other with a projection adapted to enter the slot for guiding the support into position, means for securing the support against displacement, a cutter adapted to cooperate with the end of the tubular member to sever the wire, and means for operating the cutter.

10. In combination, a cutter block provided with a wire passage, a bifurcated support, a tubular member, one extremity of which is inserted into the support for movably and reversibly supporting the member, said block being provided with a recess to receive the support, one of the elements being provided with a slot and the other with a projection adapted to enter the slot for guiding the support into position, and a fastening member engaging the block and

the support for securing the latter in position and for compressing the bifurcated portion of the support to secure the tubular member in position. 25

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 18th day of May A. D. 1909.

HARRY H. LATHAM.

Witnesses:

M. W. CANTWELL,
FRANCIS A. HOPKINS.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 7th day of June A. D. 1909.

WILLIAM OSTERHOLM.

Witnesses:

ADOLPH HOLM,
J. E. REPLOGLE.